

7. EMERGENCY MEDICAL PROCEDURES

LESSON TITLE: Emergency Medical Procedures

DATE PREPARED: October 1997. Prepared by HM1(FMF) Torres

TIME: 1 Hour

METHOD: Lecture

LOCATION: Classroom, Treatment Room

INSTRUCTORS REQUIRED: One

REFERENCES:

TRAINING AIDS: Video Presentation "Medical Emergencies"
Hands on training during actual patient assessment

OBJECTIVES: By the end of this lesson, the student will be able to:

1. Define Medical Emergencies.
2. Compare and contrast the signs and symptoms of angina pectoris versus acute myocardial infarction, and describe the treatment.
3. Describe Congestive Heart Failure, list the signs and symptoms and explain the treatment.
4. Describe the signs, symptoms and treatment for a stroke patient.
5. Describe the signs, symptoms and treatment for respiratory distress in patients with Chronic Obstructive Pulmonary Disease (COPD), asthma, emphysema and bronchitis.
6. Describe the care procedures for hyperventilation.
7. Describe the signs, symptoms and treatment for a patient in a diabetic coma versus insulin shock.
8. Describe the signs, symptoms and treatment for a patient with an acute abdomen.
9. Describe the signs, symptoms and treatment for a patient with communicable disease, and explain how the EMT should protect himself.

INTRODUCTION

Medical emergencies are those emergencies that are not caused by trauma. They do not include psychological or emotional disturbances. Medical emergencies are usually caused by disease, infection, or a defect in the structure or function of an organ or organ system.

Medical emergencies can be chronic, episodic or acute. Detecting medical problems depends on a proper patient assessment.

I. DETECTING MEDICAL EMERGENCIES

- A. The patient, family, neighbors or co-workers may alert the EMT to a known medical emergency.
- B. Medic alert identification devices may be the only way the EMT can be alerted to the patient's problem.
- C. The signs and symptoms found during the patient assessment are critical in determining the nature of the medical emergency.
- D. If you listen well, the patient will usually tell you what is wrong with themselves. Pay particular attention to complaints of:
 - 1. Pain anywhere in the body.
 - 2. Complaints of fever or chills.
 - 3. Tight feeling in the chest.
 - 4. Nausea and vomiting.
 - 5. Unusual bowel or bladder habits.
 - 6. Unusual thirst or hunger.
 - 7. Odd taste in the mouth.
 - 8. Burning sensations.
 - 9. Dizziness or feelings of fainting.
 - 10. Numbness or tingling sensations.
 - 11. Past and present medical history.
 - 12. Any medications the patient may be on.
- E. Diagnostic signs to be collected during the assessment include:
 - 1. Altered states of consciousness.
 - 2. Pulse rate and character.
 - 3. Breathing rate and character.
 - 4. Skin temperature, condition or color.
 - 5. Pupil size, equality and response.
 - 6. Breath odors.
 - 7. Color of lips, tongue and earlobes.
 - 8. Abdominal tenderness.

9. Muscular activity - spasms and paralysis.
10. Bleeding or discharges from the body.

F. If anything about the patient's general state of health appears to be unusual assume there is a medical emergency.

II. CARDIOVASCULAR EMERGENCIES

A. Anatomy

B. The nature of cardiovascular diseases:

1. Atherosclerosis, is the build-up of fatty deposits on the inner walls of the arteries.
2. Arteriosclerosis, is the siffing and hardening of the artery walls due to calcium deposits.
3. An Aneurysm is another cause of cardiovascular disorders that occurs when a weak spot in the artery begins to dilate.

C. Disorders of the Heart

1. Coronary Artery Disease (CAD)

- a. The coronary arteries are diseased and the amount of blood they can carry is reduced.
- b. The decrease in blood supply to the heart, causes a decrease in the supply of oxygen to the myocardium.
- c. Arteriosclerosis and atherosclerosis causes occlusion of the coronary vessels.
- d. Contributing Factors:

- (1) Sex (male).
- (2) Hypertension.
- (3) Smoking.
- (4) Family history.
- (5) Diabetes.
- (6) Race.
- (7) Excess fat intake.
- (8) Stress.
- (9) Sedentary existence.
- (10) Obesity.
- (11) Aggressive competitive personality.
- (12) Heavy or muscular build.

2. Angina Pectoris

- a. The vessels are narrowed by CAD and the oxygen supply is decreased to the heart.
- b. Pain will usually develop when there is a decreased supply of oxygen to the myocardium.
- c. It is usually brought on by physical exertion or emotional stress, and will diminish as the exertion or stress decreases.
- d. The attacks seldom last longer than 3-5 minutes.

3. Signs and symptoms

- a. Complaint of indigestion.
- b. Pain behind the sternum that radiates down the left arm, sometimes the right arm, or into the neck or jaw.
- c. S. O. B.
- d. Pain usually lasts 3-5 minutes.
- e. Patient usually remains still.

4. Acute Myocardial Infarction

- a. When the blood supply to a part of the heart is completely cut off and the heart muscle dies.
- b. Most heart attacks occur WITHOUT warning.
- c. The major factor in heart disease is sudden death, which occurs within the first 2 hours after onset of the symptoms.
- d. Factors that can cause an AMI are: CAD, unusual exertion, severe emotional distress, unrelieved fatigue, and undetected cardiac arrhythmias.
- e. Arrhythmias are the number one complication and cause of death, congestive heart failure is also another complication seen with AMI.

5. Signs and Symptoms

- a. Shortness of breath or shallow breathing.
- b. Productive cough.
- c. Anxiety, irritability, denial, feeling of impending doom.
- d. Signs of shock.
- e. Pain: tightness feeling around the chest, pain in the jaw, pain in the left arm, nausea or a feeling of indigestion.

f. Personality changes, sometimes the patient thrashes about.

6. Treatment for Angina and AMI

- a. Provide emotional support.
- b. High flow OXYGEN.
- c. Place the patient in a comfortable restful position (you move the patient).
- d. Monitor pulse closely for possible arrhythmias.
- e. Transport the patient without siren.
- f. If the patient has Nitroglycerin, assist him in taking: 1 pill under the tongue every 5 minutes, DO NOT give the patient more than 3 doses.

DISTINGUISHING BETWEEN ANGINA AND AMI

ANGINA

Pain follows exertion or stress.

Pain relieved by rest.

Pain usually relieved by NITRO.

Pain lasts 3-minutes.

Not associated with Arrhythmias.

Blood Pressure not affected

AMI

Pain frequently related to stress or exertion but may occur at rest

Rest does not relieve the pain.

Pain NOT relieved by NITRO

Pain lasts 30 minutes or more.

Associated with Arrhythmias.

Blood Pressure often reduced.

D. Congestive Heart Failure

1. May be brought on by:

- a. AMI.
- b. Diseased heart valves.
- c. Hypertension.
- d. COPD.

2. The left side of the heart cannot pump blood properly. Therefore, the blood backs up into the lungs because the right side of the heart is still pumping correctly.

3. Eventually the right side fails and the blood backs up in the circulatory system.

4. Signs and symptoms

- a. Tachycardia.
- b. Dyspnea.
- c. Normal or elevated blood pressure.
- d. Cyanosis.
- e. Rales heard on auscultation of the lungs.
- f. Patient coughing up pink frothy sputum.
- g. Edema of lower extremities.
- h. Enlarged liver and spleen, abdominal distention.
- i. Engorged pulsating neck veins.
- j. The patient will want to remain in a sitting position. Can not breath lying down.

5. Treatment

- a. Allow the patient to assume the most comfortable position for breathing.
- b. Give oxygen, nasal prongs.
- c. Monitor the patient closely.

E. Stroke

1. A stroke or cerebrovascular accident (CVA), is caused by the occlusion or rupturing of an artery suppling the brain, causing a lack of oxygen or great pressure on the brain.
2. The patient usually presents with uneven pupils, snoring type respirations, weakness or paralysis on one side.
3. If the stroke patient is conscious, maintain an open airway, keep the patient calm, administer high flow oxygen, and transport in semi-reclined position.
4. Do the same for the unconscious patient, except transport in a lteral recumbent position, with the affected limbs padded and placed under the body.

III. DIABETIC EMERGENCIES

- A. Diabetes is caused by the failure or the pancreas to produce enough or any insulin. Without insulin sugar is not correctly broken down and the body gets a gigh sugar level. As an EMT you need to distinguish between high sugar condition in a patient (Diabetic Coma) and a low sugar condition (Insulin Shock).

DIABETIC COMA

INSULIN SHOCK

Cause

- New diabetic condition
- Diabetic has not taken insulin
- Diabetic overate
- Diabetic is ill

- The diabetic has taken too much insulin
- Not eaten enough for the amount of insuling taken
- Diabetic over exercised
- Diabetic vomited a meal

Signs and Symptoms

- Gradual onset
- Complains of dry mouth and intense thirst
- Abdominal pain and vomiting
- Gradual increasing restlessness, confusion, followed by stupor
- Increased, deep respirations
- Weak rapid pulse
- Normal or low Blood Pressure
- Dry, Red, Warm Skin
- Eyes appear shrunken
- Breath sickly sweet smell, acetone

- Rapid onset
- Dizziness and headache
- Abnormal, hostile, aggressive behavior, many times confused with alcohol intoxication
- Fainting or convulsions. Ocassionally coma
- Respirations normal
- Full rapid pulse
- Normal Blood Pressure
- Pale, Cold and Clammy Skin
- Profuse perspiration
- Copious saliva, drooling
- Complains of being hungry

Emergency Treatment

- Immediately transport

- Conscious patient - give sugar
- Unconscious patient - protect the airway and give nothing by mouth.
- Transport

When faced with a patient who may be suffering form either of these conditions:

1. Look for medic-alert identification.
2. If the patient is a known diabetic, but the condition is uncertain, always give sugar.

IV. RESPIRATORY SYSTEM DISORDERS

A. Dyspnea

1. Causes - When a patient displays labored or difficult breathing, he has dyspnea. Dyspnea is one stage of respiratory distress, following an increase in the rate and depth of respirations. A patient in respiratory distress will usually begin by having an increase in the rate and depth of respirations. He will then experience difficult or labored breathing. Hypoxia will result from a decreased supply of oxygen to the tissues. If the distress continues, the patient will have periods of temporary cessation of breathing (Apnea.)
2. Signs and Symptoms
3. Emergency Treatment

B. COPD

1. The chronic obstructive pulmonary disease patient usually is an older person suffering from chronic bronchitis, emphysema, black lung, or some undetermined respiratory illness. Cyanosis and edema in the lower extremities are warning signs of possible CHF. COPD patients are oxygen sensitive. Their drive to breathe is a high CO₂ level, opposite of the normal drive to breathe of a low O₂ level.
2. Signs and Symptoms
3. Emergency Treatment

C. Asthma

1. Cause
2. Signs and Symptoms
3. Emergency Treatment

D. Hyperventilation

1. Cause. Patient breathes too deeply and too rapidly. Usually caused by emotional stress. The patient may appear like they are having a seizure. Too much oxygen in the muscle cells cause them to go into a constant spasm.
2. Signs and Symptoms
3. Emergency Treatment